

WHAT IS CLAIMED IS:

Sub
1/

1. An optical pickup apparatus comprising:
a light source for emitting a light beam;
5 a phase device for providing the light beam with a phase difference between an inner radius portion of the light beam and an outer radius portion of the light beam
an objective lens for converging the light beam to which the phase difference has been provided and irradiating the
10 converged light beam on an information recording medium;
and
detecting means for respectively detecting an
intensity of an inner radius portion of the returning light
beam and an intensity of the outer radius portion of the
15 returning light beam from said information recording medium,
thereby detecting error information of said information
recording medium.
2. An apparatus according to claim 1, wherein said phase
20 difference of said phase device is set to a value in a range
from $5\lambda/12$ to $7\lambda/12$.
3. An apparatus according to claim 1, wherein said phase
device is a variable phase device in which said phase
25 difference is varied.
4. An apparatus according to claim 1, wherein said phase

device is a liquid crystal device in which optical phases of the inner radius portion and the outer radius portion of the light beam emitted from said light source are varied in accordance with an applied voltage.

5

5. An apparatus according to claim 1, further comprising an optical device which is provided at an arbitrary position in an optical path between said light source and said objective lens, said optical device separating the light emitted from said light source and the returning light from said information recording medium and supplying said returning light to said detecting means.

6. An apparatus according to claim 1, further comprising driving means for positioning said objective lens to a focal point on the basis of said error information detected by said detecting means.

7. An apparatus according to claim 1, further comprising a spherical aberration compensation device which is provided at an arbitrary position in an optical path between said light source and said objective lens and compensates a spherical aberration of the light emitted from said light source on the basis of said error information detected by said detecting means so as to suppress an influence of the spherical aberration on the light beam that is caused by a thickness error of said information recording medium.

A¹
Cont.

8. An information recording and/or reproducing apparatus having an optical pickup apparatus according to claim 1, wherein information recording or information reproduction
5 is performed by irradiating the light beam on said information recording medium.

00765306-042201